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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,476	01/10/2002	Ray A. Walker	10019374-1	9903

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

LIANG, LEONARD S

ART UNIT PAPER NUMBER

2853

DATE MAILED: 09/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,476

Applicant(s)

WALKER, RAY A.

Examiner

Leonard S Liang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION***Drawings***

The drawings are objected to because on page 3, line 28, the reference 16 refers to the linking device. However, in figure 2, reference 16 is pointing to a printhead. It is not clear whether reference 16 refers to a printhead or a linking device. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 20, 62. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 3, 5, 7, 12, 16, and 23 objected to because of the following informalities:

Claim 3 states "The ink level sensing system...coupling a radio frequency signal **throught** the sidewall..." This is a spelling error. It will be construed that the statement should read "The ink level sensing system...coupling a radio frequency signal **through** the sidewall..."

Claim 5 states "The ink level sensing system...measure electrical continuity through ink within the ink." This does not make sense. It will be construed that the statement should read "The ink level sensing system...measure electrical continuity through ink within the ink **reservoir**."

Claim 7 states "A replaceable printing component...a linking device disposed entirely within the reservoir for emitting a signal indicative printing material..." This is not proper grammar. It will be construed that the statement should read states "A replaceable printing component...a linking device disposed entirely within the reservoir for emitting a signal indicative **of** printing material..."

Claim 12 states "The ink level sensing system...wherein the reservoir does not contain electrical conductors that extends..." This is not proper grammar. It will be construed that the

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statement should read, "The ink level sensing system...wherein the reservoir does not contain electrical conductors that extend..."

Claim 16 states "The printing system...includes a pair of electrodes **are** disposed..." This is not proper grammar. It will be construed that the statement should read "The printing system...includes a pair of electrodes disposed..."

Claim 23 states "The replaceable ink container...includes a pair of electrodes **are** disposed..." This is not proper grammar. It will be construed that the statement should read, "The replaceable ink container...includes a pair of electrodes disposed..."

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

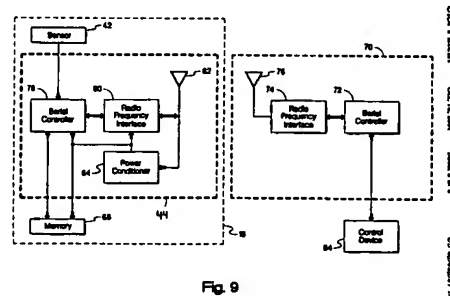
A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-25 are rejected under 35 U.S.C. 102(a) as being anticipated by Walker (US Pat 6302527).

Walker discloses:

- {claim 1} An ink level sensing system (figure 9, reference 42; column 2, lines 20-29)



comprising an ink reservoir having a radio frequency interface disposed therein (figure 2, reference 24; figure 9, reference 80; column 6, lines 47-55);

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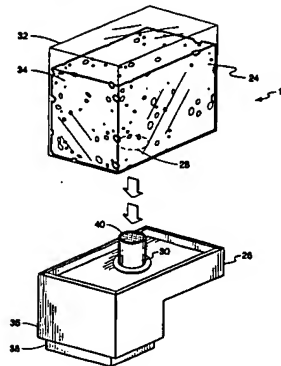


Fig. 2

a printing device configured for receiving the ink reservoir (figure 2, reference 38), the printing device including a radio frequency interface for receiving ink level information that is coupled through the ink reservoir by the radio frequency interface within the ink reservoir (figure 9, references 74, 80; column 6, lines 47-65; column 7; column 8, lines 1-39).

- {claim 2} sensor electrically connected to the radio frequency interface disposed within the ink reservoir (figure 9, references 42, 80; column 7, lines 32-38), the sensor providing a sensor output signal indicative of ink level within the ink reservoir to the radio frequency interface (column 7, lines 32-38).
- {claim 3} ink reservoir includes a sidewall (figure 2, reference 32; housing inherently contains sidewall) and wherein the radio frequency interface includes an antenna for coupling a radio frequency signal through the sidewall to the printing system (figure 9, reference 82; column 7, lines 20-26).
- {claim 4} radio frequency interface within the ink reservoir is enclosed in an encapsulant material (figure 5, reference 46)

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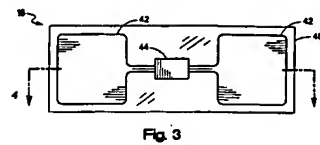


Fig. 3

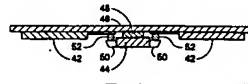


Fig. 4

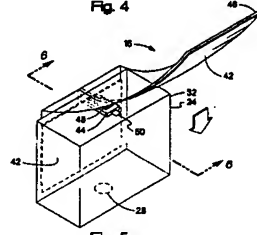


Fig. 5

and wherein the encapsulant material is at least partially surrounded by ink within the ink reservoir (figure 6, references 34, 46)

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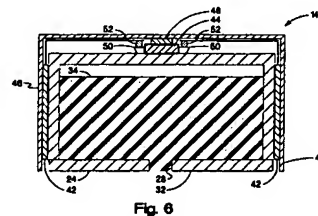


Fig. 6

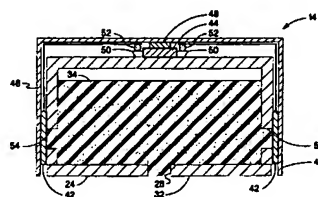
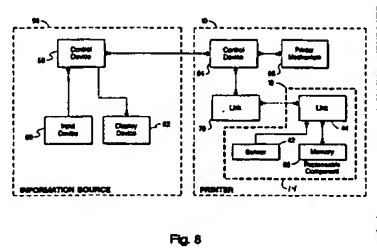


Fig. 7

- {claim 5} sensor is a pair of electrodes (column 4, lines 39-43) disposed within the ink reservoir to measure electrical continuity through ink within the ink reservoir (figure 7, reference 42; column 5, lines 30-49)
- {claim 6} sensor is a pair of electrodes disposed within the ink reservoir to measure electrical capacitance between the pair of electrodes (figure 6, reference 42; column 5, lines 8-20)

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- {claim 7} A replaceable printing component (column 1, lines 62-64) comprising: a reservoir for containing printing material (figure 2, reference 24); linking device disposed entirely within the reservoir (figure 8, reference 14, 44)



for emitting a signal indicative of printing material within the reservoir (figure 9, reference 44; column 6, lines 47-67; column 7, column 8, lines 1-39) wherein the reservoir is formed of a material so that the emitted signal passes through the reservoir for providing information to the printing system (figure 5, reference 32; column 4, lines 33-43).

- {claim 8} linking device is a radio frequency linking device for providing a radio frequency signal (figure 9, reference 80; column 6, lines 47-55).
- {claim 9} replaceable printing component is a replaceable ink reservoir (figure 2, reference 14) and wherein the linking device includes a sensor (figure 9, reference 42) that provides an output signal indicative of ink within the ink reservoir (column 7, lines 30-38) and wherein the output signal is coupled to the printing system by the linking device (column 4, lines 33-43).
- {claim 10} the linking device includes a sensor having a pair of electrodes disposed within the ink reservoir to measure electrical continuity through ink within the ink reservoir (as taught in claim 5 above).
- {claim 11} the linking device includes a sensor having a pair of electrodes that are disposed within the ink reservoir to measure capacitance between the pair of electrodes (as taught in claim 6 above).
- {claim 12} reservoir does not contain electrical conductors that extend from within the reservoir to a location outside the reservoir (figure 5-7).

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- {claim 13} A printer system having a printer portion and at least one replaceable receiver (figure 2, references 14, 24, 26) comprising: a first wireless link associated with the replaceable reservoir (figure 9, reference 44), the first wireless link disposed entirely within the replaceable reservoir (figure 8, reference 14, 44); a second wireless link associated with the printer portion (figure 9, reference 70), the second wireless link receiving replaceable reservoir information from the first wireless link by transmission of information in a wireless manner (column 6, lines 17-21).
- {claim 14} first wireless link is a radio frequency transmitter for transmitting a radio frequency signal (figure 9, reference 80) and the second wireless link is a radio frequency receiver for receiving the radio frequency signal and determining the replaceable reservoir information based thereon (figure 9, reference 74); column 6, lines 47-67; column 7, column 8, lines 1-39).
- {claim 15} replaceable reservoir is a replaceable ink reservoir and wherein the replaceable reservoir information is ink level information for the replaceable ink reservoir (column 1, lines 20-24).
- {claim 16} first wireless link includes a pair of electrodes disposed in the replaceable reservoir to measure electrical continuity of ink within the replaceable reservoir (as taught in claim 5)
- {claim 17} first wireless link includes a pair of electrodes disposed in the replaceable reservoir to measure capacitance between the pair of electrodes (as taught in claim 6)
- {claim 18} the printer portion is an ink jet printer and wherein the replaceable reservoir contains ink (column 1, lines 20-24)
- {claim 19} A method for transferring status information from a replaceable printing component to a printer portion (column 1, lines 20-24); determining status information (as taught in claim 2); transferring status information (as taught in claim 3)

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- {claim 20} the replaceable printing component is an ink reservoir and the printing portion is an ink jet printer and wherein the status information is ink level information in the ink reservoir (column 1, lines 20-24)
- {claim 21} the transferring status information is accomplished by providing a radio frequency signal that couples through a sidewall of the replaceable printing component (as taught in claim 3).
- {claim 22} A replaceable ink container (figure 2, reference 14; column 1, lines 20-24) including a sensing system (column 2, lines 20-22)
- {claim 23} the sensing system includes a pair of electrodes disposed in the replaceable ink container for measuring electrical continuity of ink within the replaceable ink container (as taught in claim 5).
- {claim 24} the sensing system includes a pair of electrodes for measuring capacitance between the pair of electrodes (as taught in claim 6).
- {claim 25} the sensing system senses more than one parameter of ink within the ink container (i.e. electrical continuity and capacitance as taught in claims 23 and 24 above)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Walker (US Pat 6312106) discloses a method and apparatus for transferring information between a replaceable consumable and a printing device.

Schantz (US Pat 5589859) discloses inkjet printhead electrical connections.

Kyogoku et al (US Pat 4415886) discloses a residual ink detection mechanism.

Arthur (US Pat 5049898) discloses a printhead having memory element.

Helterline et al (US Pat 6039430) discloses a method and apparatus for storing and retrieving information on a replaceable printing component.

Wurz et al (US Pat 5838253) discloses a radio frequency identification label.

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Moskowitz et al (US Pat 5528222) discloses a radio frequency circuit and memory in thin flexible package.

Terasawa (US Pat 4636814) discloses a printing apparatus.

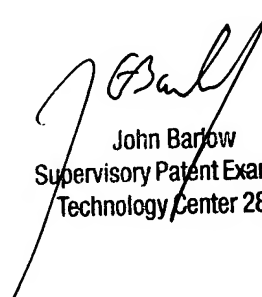
Coudray et al (US Pat 6325477) discloses a method and device for determining the quantity of product present in a reservoir, a product reservoir and a device for processing electrical signals intended for such a determination device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (703) 305-4754. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

lsl *LSL*
September 10, 2002


John Barlow
Supervisory Patent Examiner
Technology Center 2800